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THE MARKET SUPPLY OF BEEF IN HAWAII—1983

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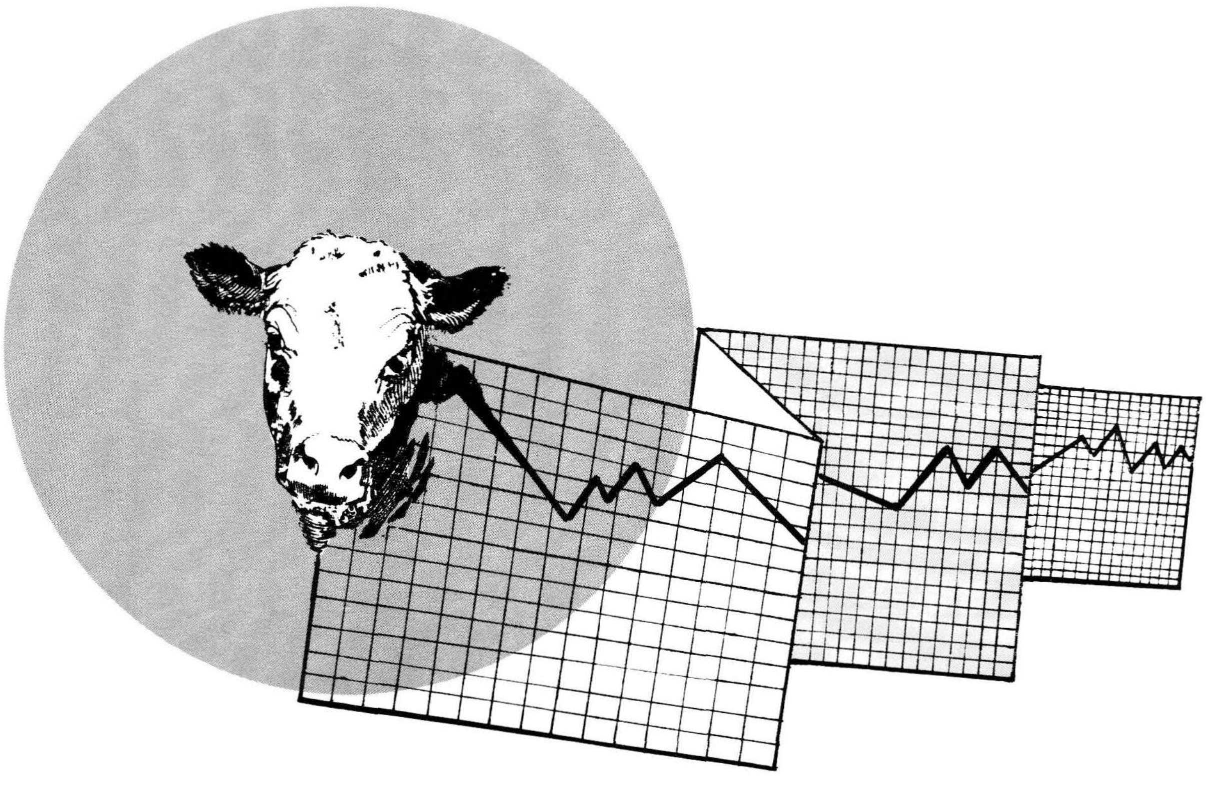

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THE MARKET SUPPLY OF BEEF IN HAWAII—1983

Peter Garrod, Charles Ingraham, Linda Cox, and James Nolan

This is the fifth in a series of monographs prepared by the Department of Agricultural and Resource Economics on Hawaii's beef industry. The first focused on the structure of the beef market in Hawaii; the second on alternative market organizations; the third was a summary of the first two; the fourth analyzed the impact of changes in size and location of feeding and processing facilities on the industry.

The focus of this paper is a description of the market supply of beef in Hawaii: in particular, in what form and grade beef enters the retail level, and how the commodity is finally marketed. Data on the market supply of beef from Hawaii and foreign sources, as well as an estimate of the volume of beef supplied from the mainland, are available in Statistics of Hawaiian Agriculture--1983. In this monograph we present a more detailed breakdown of market supply and an alternative estimate of the volume of beef in the Hawaii market that originates on the mainland. The supply data presented, however, do not include processed beef such as hot dogs, sausages, and other prepared foods containing beef. The only form of processed beef included in the following data is ground beef.

Overview

Hawaii beef producers are supplying a declining share of the local beef market. The estimates reported here indicate that this share is smaller than previously believed. (See Figure 1.) Choice beef dominates the market (Figure 2) and Hawaii's share of the choice beef market is less than 15 percent. On the other hand, Hawaii's share of the less-than-choice market is 70 percent. The difference in the quality of the beef imported from the mainland versus the quality produced in Hawaii is graphically illustrated in Figures 3 and 4. The great majority enters the retail market level in partially processed form, i.e., as primals or fabricated cuts (boxed beef) or as ground beef. Beef in the form of carcasses represents only 6 percent of the market for domestic beef (Figure 5); and if foreign beef is included, the share of the market represented by carcasses drops to 5 percent. Slightly more than half the beef goes directly to retail outlets or consumers, about 30 percent goes to restaurants, and the remainder is divided between sales to institutions and to the military (see Figure 6).

How the Data Were Collected

Information on the slaughter of Hawaii beef (pounds dressed-weight) by grade, form marketed, and where marketed during 1983 was collected from several sources. The primary source of information was the slaughterhouses. If the slaughterhouse sold beef to wholesalers, the wholesalers were contacted to find out the disposition of the beef. Data were also collected from the Hawaii Agricultural Reporting Service. Cooperation was excellent and these data on Hawaii-produced beef can be treated with a high degree of confidence.

Data on beef imported to Hawaii from the mainland were obtained by surveying wholesalers, large retail chains, and other importers of beef

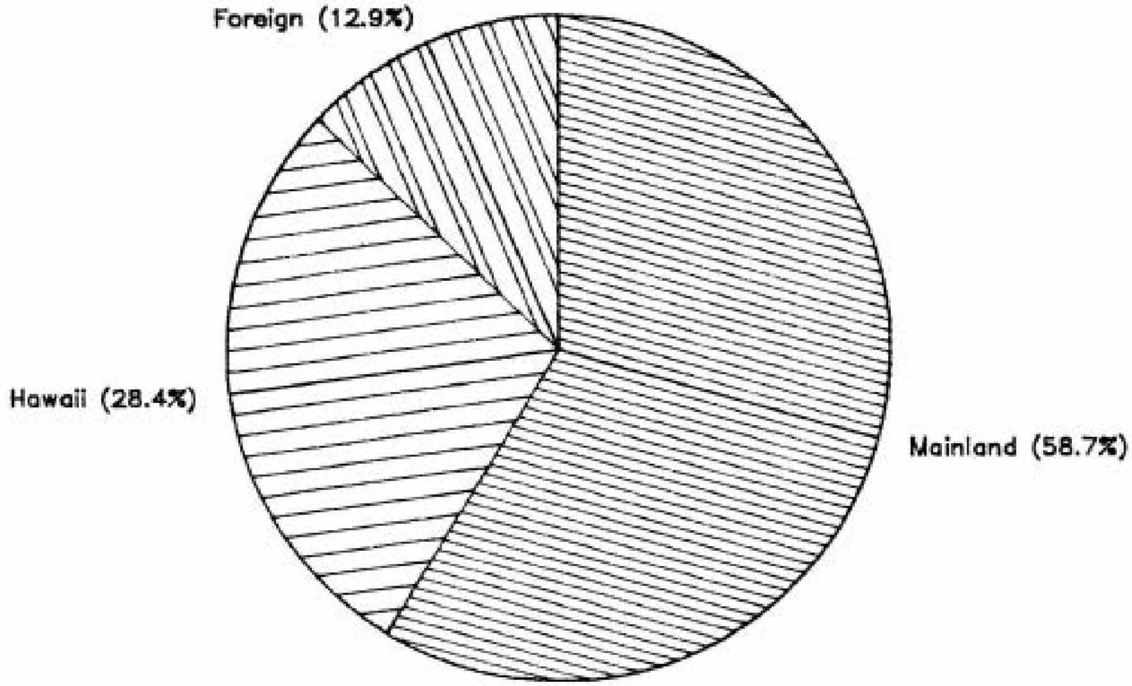

Figure 1. Hawaii market supply of beef (market shares by source).

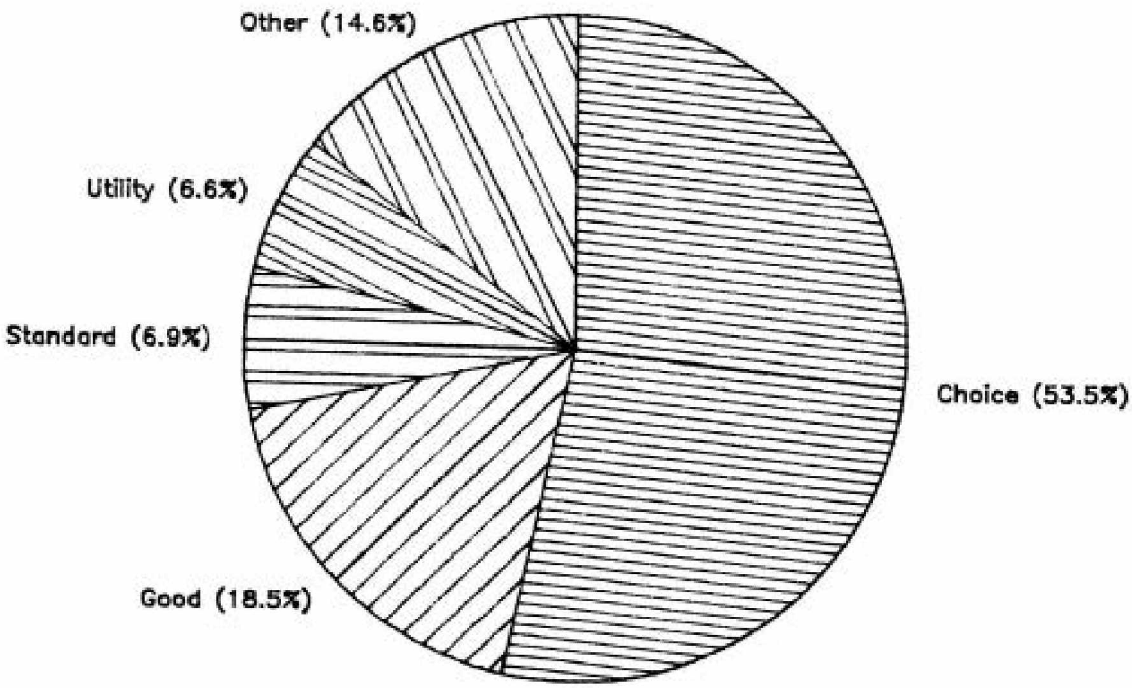

Figure 2. Beef market shares by grade (excluding foreign beef).

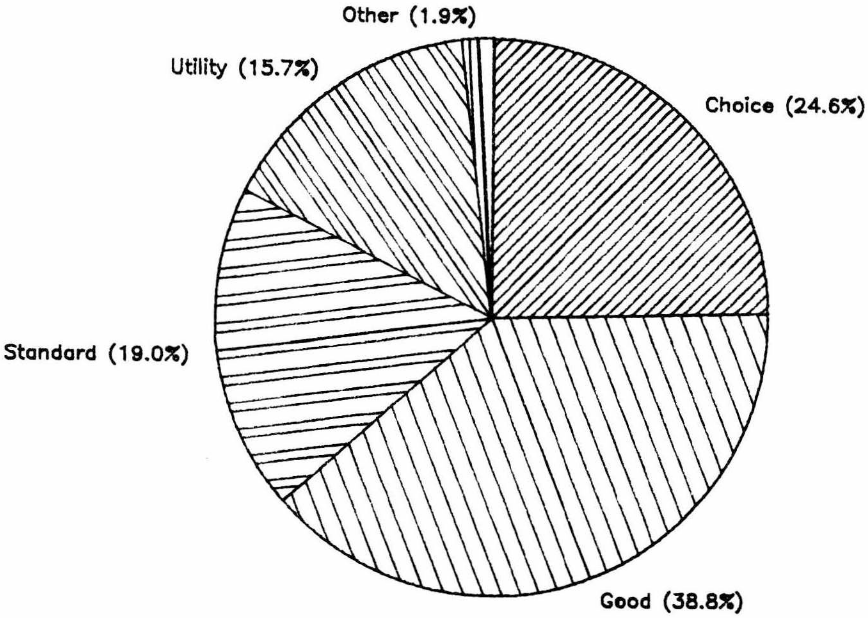

Figure 3. Market shares by grade (Hawaii beef).

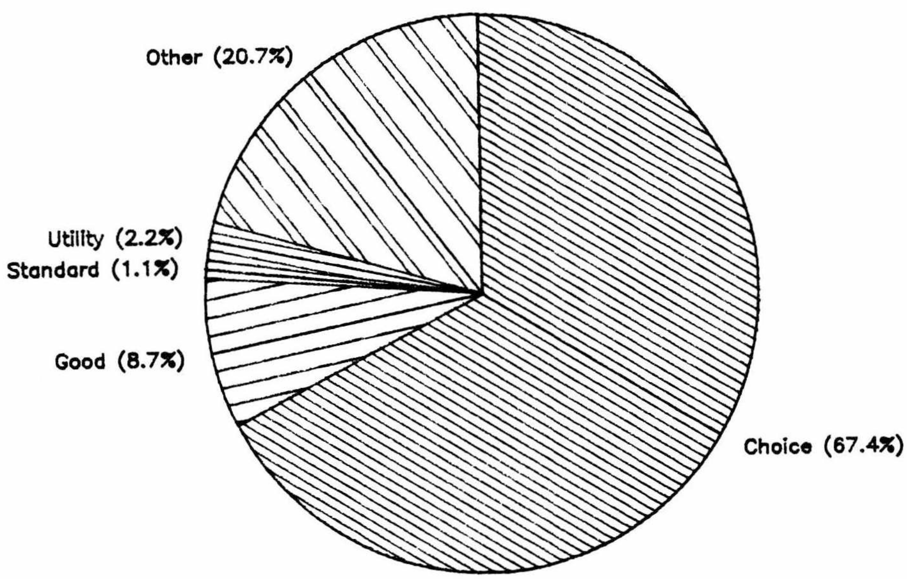

Figure 4. Market shares by grade (imports of mainland beef).

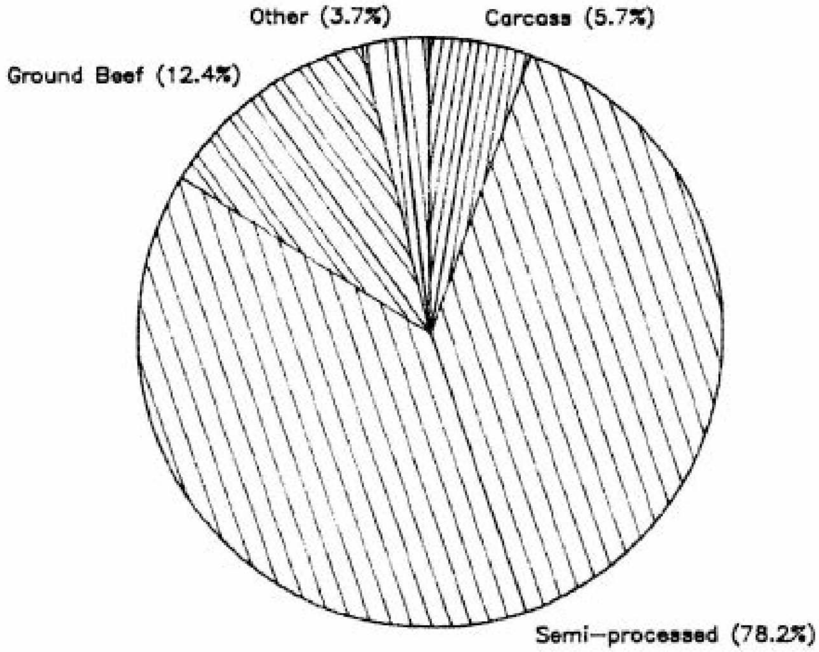

Figure 5. Market supply of domestic beef (by form).

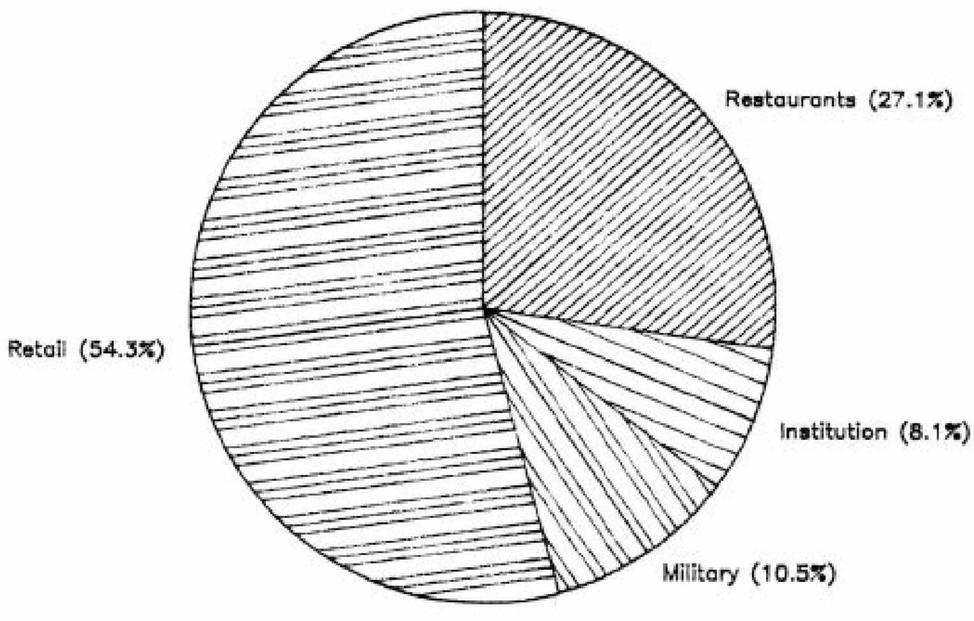

Figure 6. Final market outlet (beef from all sources).

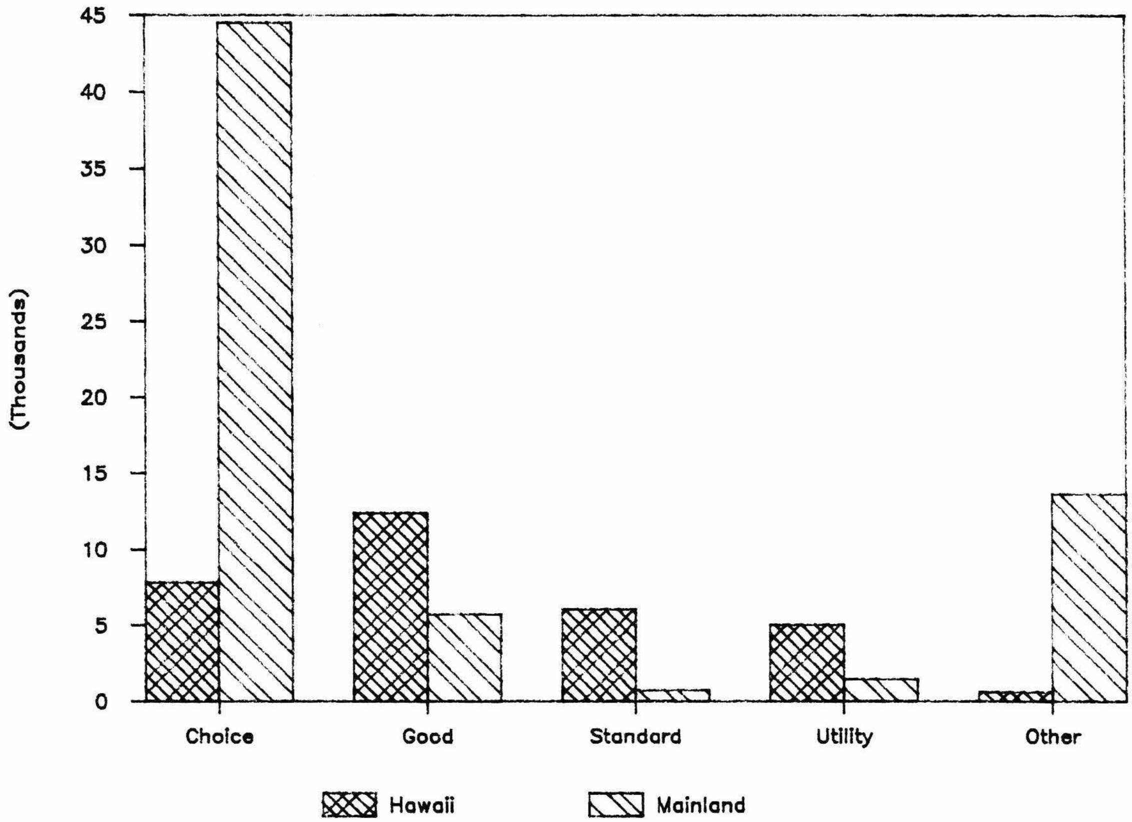

Figure 7. Market shares by form (millions of pounds).

such as fast-food chains. Data on direct imports by the military were obtained from the military. In the case of import and wholesale operations, a list of beef wholesalers was compiled. Sources used in compiling this list included the yellow pages of phone directories for all islands, Index of Hawaii Business, and industry contacts. The initial list contained 49 wholesalers. An attempt was made to contact every firm on the list. Each firm was asked if it imported any beef and, if it did, the sources of the beef marketed by grade and form and the disposition of the beef by outlet. First a letter was sent; for those who failed to respond, another letter was sent; and for those who still failed to respond, an attempt was made to contact them by telephone. In the end, we had complete data from 26 firms: 12 firms did not sell any imported beef; two firms were no longer in business; we were unable to contact four firms; and five firms refused to cooperate. Considering only the firms that imported beef and that we were able to contact, the response rate was 84 percent.

When a firm refused to supply the data, we attempted to obtain the information from other sources. One method used was to backtrack through the marketing channel and obtain information from firms supplying beef to the nonresponding firm. Another method was to consult with knowledgeable individuals in the beef marketing industry and obtain their estimates of the beef marketed by the firm in question. In this manner estimates were obtained for all the firms that refused to cooperate.

Form and Quality

The estimated market supply by form and quality is given in Table 1 for the State of Hawaii, the market

Table 1. Total Market Supply of Beef:
by Grade and Form in Thousands of Pounds

	Prime	Choice	Good	Standard	Utility	Other	Total	Percent
Carcass	28	3,198	1,418	436	60	0	5,140	4.6
Primal	199	34,638	11,775	5,114	4,967	0	56,693	50.3
Fab. Cuts	93	14,475	4,914	926	87	0	20,494	18.2
Ground beef	0	0	0	0	0	12,258	12,258	10.9
Other[a]	11	33	0	260	1,345	1,999	3,648	3.2
Foreign	0	0	0	0	0	14,555	14,555	12.9
Total	331	52,344	18,107	6,736	6,459	28,812	112,788	100.0

[a]Includes short ribs, veal, tails, tripe, and offal.

Table 2. Market Supply of Hawaii Beef:
by Grade and Form in Thousands of Pounds

	Prime	Choice	Good	Standard	Utility	Other	Total	Percent
Carcass	27	1,171	1,387	413	60	0	3,059	9.6
Primal	36	2,814	6,804	4,718	4,865	0	19,237	60.1
Fab. Cuts	89	3,845	4,171	902	87	0	9,094	28.4
Ground beef	0	0	0	0	0	593	593	1.9
Other[a]	0	0	0	0	0	0	0	0
Total	153	7,830	12,363	6,033	5,012	593	31,984	100.0

[a]Includes short ribs, veal, tails, tripe, and offal.

supply of beef produced in Hawaii in Table 2, and imports from the mainland in Table 3. The estimates obtained for foreign and Hawaii beef are identical with those available in published sources. However, the estimates of imports from the mainland are substantially larger than previously published estimates, by 13 million pounds (weight as shipped), or nearly 25 percent. This is a significant difference, particularly because the estimates reported here err, if at all, on the low side. (The most likely error in the reported estimates is that some importers of beef were omitted.)

Based on the estimates reported here, the share of Hawaii beef in Hawaii's market supply is less than previously published estimates, 28 percent as opposed to 32 percent. The share of the three primary sources of beef in Hawaii's market is illustrated in Figure 1.

The form in which the beef was supplied to the Hawaii market was divided into five categories: carcass beef, primals, fabricated cuts, ground beef, and other. The carcass category includes two slightly different types; one is the standard carcass marketed in Hawaii and on the mainland and the other is market-ready beef. The latter is the form in which the military purchases carcasses and differs from the standard commercial form only in that more fat is trimmed off. Primals are the eight basic portions of a side of beef, i.e, chuck, brisket and foreshank, rib, short plate, short loin, flank, sirloin, and round. Fabricated cuts are further divisions of the primal cuts. Both primals and fabricated cuts typically are wrapped in cryovac and shipped in boxes, and are also referred to as boxed beef or semiprocessed beef. A small quantity of portion-controlled cuts of beef was also imported from the mainland. This amounted to about 1 percent of total imports and is included with fabricated cuts. "Other" includes imports of rib eye, veal, tails, tripe, short ribs, and offal.

Imports of foreign beef, almost entirely from New Zealand and Australia, were treated as a separate category. The imports are not graded and data on form were not available. However, based on personal observation, most would fall into the primal and fabricated cuts categories.

The quality measure is the standard United States Department of Agri-

Table 3. Imports of Mainland Beef: by Grade and Form in Thousands of Pounds

	Prime	Choice	Good	Standard	Utility	Other	Total	Percent
Carcass	0	2,026	31	23	0	0	2,081	3.1
Primal	163	31,824	4,971	396	102	0	37,456	56.5
Fab. Cuts	4	10,630	742	23	0	0	11,400	17.2
Ground beef	0	0	0	0	0	11,664	11,664	17.6
Other[a]	11	33	0	260	1,345	1,999	3,648	5.5
Total	178	44,514	5,744	703	1,447	13,663	66,249	100.0

[a]Includes short ribs, veal, tails, tripe, and offal.

Table 4. Where Beef Is Marketed by Source and Distribution in Thousands of Pounds

	Hawaii	Mainland	Foreign	Total
Retail	16,240	32,890	10,479	59,608
Restaurants	8,945	17,212	3,639	29,796
Institutions	3,345	5,092	437	8,874
Military	3,455	8,129	0	11,584
Unknown[a]		2,925		2,925
Total	31,984	66,249	14,555	112,788

[a]Beef for which the channel to the consumer is unknown.

culture grades for beef. "Other" includes those forms of beef for which grades were not available and all ground beef. Ground beef is included here because it was not possible to clearly classify it in terms of the usual grades.

Comparing Tables 2 and 3, it is clear that the quality of the beef imported from the mainland is different from the quality of beef produced in Hawaii. This is illustrated in Figures 3, 4, and 7. Mainland imports are primarily choice beef (67 percent), followed by processed beef in the form of hamburger (21 percent), while three-quarters of Hawaii-produced beef is marketed at less-than-choice grades.

The form of beef imported from the mainland is essentially the same as the form in which Hawaii beef is marketed. In both cases, excluding ground beef, about 88 percent of the beef is marketed as either primals or fabricated cuts. The 11.6 million pounds of ground beef imported from the mainland, compared with the 600 thousand pounds of Hawaii beef distributed locally as ground beef, indicate that many local retail outlets and fast-food chains find it more profitable to purchase processed beef from the mainland. Hawaii processors are not competitive with mainland suppliers in the local market for processed beef in the form of ground beef.

One of the objectives of the study was to determine how the beef reached the consumers. This information is presented in Table 4. Five channels were considered. The first three, retail, restaurants, and institutions, include all beef sold through these outlets. Retail also includes any custom slaughter of beef and any beef sold directly to the public by the slaughterers or processors. Institutions are organizations such as schools and prisons. The military category includes both beef sold to the military by Hawaii suppliers and beef imported by the military from the mainland. It includes beef sold in the commissaries and military dining facilities, and that issued to Navy ships in Hawaii. The final entry, "other," includes all the beef for which we were unable to obtain an estimate of market destination.

Over 50 percent of the market supply of beef passes through civilian retail stores. The next biggest market segment is restaurants, accounting for approximately a quarter of the market.

The remaining share of the market is divided between the military and the institutional market (see Figure 6).

The distribution pattern for Hawaii beef is almost the same as that of imported beef from the mainland. The only difference is that a slightly larger share of the mainland beef reaches the consumers through retail chains (see Table 5).

Implications

The primary focus of this monograph is the description of the market supply of beef in Hawaii by grade and form and market outlet. However, two important implications for the beef industry in Hawaii become apparent.

The first is that the market for beef grading less-than-choice is nearly saturated at current price levels. In 1983, approximately 75 percent of the supply of less-than-choice beef came from Hawaii (excluding imports of ungraded beef from foreign sources). This figure is based on annual data. However, beef supplies are not constant over the year and during months of peak supplies of local beef, the market is likely to be completely supplied from local sources. In fact, it has been reported (Muench) that during some months of the year stocks of U.S. good beef from Hawaii exceed the capacity of the market to absorb this grade of beef (at the existing price). In this situation the owners of the less-than-choice beef have really two alternatives: (1) store the beef and wait for the market to clear, or (2) reduce the price in order to move the beef.

Both alternatives have very real costs associated with them. In the first case, storage incurs costs and these costs will have to be absorbed by the processor, slaughterer, and producer. The second alternative, lowering the price, not only will reduce the returns to the processor, slaughterer, and producer, but has the potential of reducing the sales of choice beef inasmuch as good and less-than-good beef are substitutes for choice beef. Also, if the retailers already have stocks of good or choice beef on hand, they will resist passing the decrease in price on to consumers as this would reduce their returns on beef already in inventory. In fact, the most likely result of lowering the price of beef is to induce retailers to buy the beef and store it themselves, in effect, transferring the storage activity from the processors to the retailers.

The second implication for the industry is that the market for beef in Hawaii is clearly for beef in the form of primal or fabricated cuts, or processed beef. Including foreign beef, this accounts for 95 percent of the market. However, the price paid to producers in Hawaii is a formula price based on the Los Angeles job-lot carcass price plus transportation. This

Table 5. Percentage Distribution of Beef Market Supply by Source and Distribution

	Hawaii	Mainland	Foreign	Total
Retail	50.7	59.6	72.0	52.9
Restaurants	28.0	26.0	25.0	26.4
Institutions	10.5	7.7	3.0	7.9
Military	10.8	12.3	0.0	10.3
Unknown		4.4		2.6
Total	28.4	58.7	12.9	

is not necessarily bad, as long as the pricing formula closely approximates the price of the product actually competing with Hawaii beef for the market. However, there is always the danger, when using a "rule of thumb" pricing formula, that the market will change and that the pricing formula will not reflect the change.

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